

REMARKS

1. Applicant thanks the Examiner for the Examiner's comments which have greatly
5 assisted Applicant in responding.

2. The Examiner has objected Claims 4-10 for formalities under 37 CFR 1.75(c).
Applicant has amended Claims 4-10, each of which depends on Claim 1 only.
Therefore the objection is now deemed moot.

3. The Examiner has rejected Claims 1-3 under 35 U.S.C. §112, second
10 paragraph, as being indefinite for failing to particularly point out and distinctly claim the
subject matter.

The parenthetic plurals in Claim 1 and the language incorporated in it from original Claim
2 have been replaced by "at least one" constructs. Additionally, two minor corrections
have been requested on Pages 1 and 9, and Claim 1 has been amended to refer to
15 the at least one float being linked to the armature "by a, or a respective, link" so there is a
definite antecedent for "link" as used later in Claim 1.

Additionally, original Claims 2-3 have been deleted. These amendments are without
prejudice to the Claims as originally filed.

The amended Claim 1 particularly points out and distinctly claims the subject matter and
20 therefore the rejection is now deemed moot.

4. The Examiner has rejected Claims 1-3 under 35 U.S.C. §103 as being
unpatentable over KAFKA in view of RAICHLEN.

Applicant respectfully disagrees.

Original Claim 1 has been amended to combine it with original Claim 2. Amended
25 Claim 1 is patentably distinguished over the prior art, for the reasons explained below.

In RAICHLEN et al., for the half-in, half-out arrangement of the float to have the stated
effect of producing approximately equal forces on the up and down strokes, necessarily
the remainder of the driven mass must be negligible. This is the complete antithesis of
the concept of the present invention, as now specifically claimed in Claim 1 by the

addition of the language from original Claim 2, that it is the contribution to the driven mass of the masses of the float and link which should be negligible. Thus applying the teachings of RAICHLEN et al. to the linear generator of KAFKA cannot arrive at a construction within the terms of amended Claim 1.

- 5 From a slightly different angle one might observe that the teaching of RAICHLEN et al. is fundamentally irreconcilable with KAFKA, because the armature in Kafka necessarily has a significant mass, and so it is not apparent that the skilled man would find it obvious to apply the teachings of RAICHLEN et al. to RAICHLEN.

- 10 In view of the above, the Applicant respectfully submits that it would not have been obvious to a man skilled in the art to apply the teachings of RAICHLEN et al. to the linear generator of KAFKA to arrive at a construction in which the contribution to the driven mass of the float and link is negligible and that accordingly a 35 USC 103 objection to amended Claim 1 would be unjustified.

The Applicant would also respectfully comment on KAFKA as follows:

- 15 Looking at the generating function in detail, it shows that magnetic plates are mounted at either end of the annular coil. The purpose of these is to attract, and thereby maintain, the permanent magnet in its up or down position until sufficient force is available from the float to overcome this magnetic detent. The point is that once there is sufficient force, a rapid movement is procured of the magnet through the coil in order to generate a
20 meaningful EMF. This is clearly spelt out in column 2, lines 32 to 30, and column 4, lines 66 to 75.

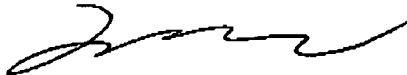
- The Examiner might have assumed that the magnet is massive, and that this is the reason for a substantial wave action being necessary to move it, i.e. by implication the magnet is therefore much heavier than the float and links. This is actually not the case, as
25 evidenced by the fact that the magnet is stated to be made from ALNICO (KAFKA, column 4, line 60) which happens to be a ceramic based material, and very light.

In view of the above, Applicant respectfully requests that the Examiner reconsiders and withdraws the 35 USC 103 rejection.

CONCLUSION

Based on the foregoing, Applicant considers the present invention to be distinguished from the art of record. Accordingly, Applicant earnestly solicits the Examiner's withdrawal of the rejections raised in the above referenced Office Action, such that a Notice of Allowance is forwarded to Applicant, and the present application is therefore allowed to issue as a United States patent.

Respectfully Submitted,



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AMENDMENTS TO THE CLAIMS

This listing of claims below will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 5 1.(currently amended) An apparatus of wave energy to electrical energy power conversion comprising:

at least one linear generator having a stator and an armature which can be linearly driven relative to the stator to generate electrical energy and at least one float linked to the armature by means of at least one link and which, in use, is immersed in the sea to
10 be subject to the action of waves to drive the armature, the at least one float, the armature and the at least one link thereby constituting a wave-driven mass;

wherein the weight of the wave-driven mass is substantially equal to half the upthrust provided by the water displaced by the at least one float when fully immersed in the water; and

- 15 wherein the contribution to the weight of the wave driven mass of the at least one float and the at least one link is negligible compared with that of the armature.

2.(cancelled).

3.(cancelled).

- 4.(currently amended) The apparatus of claim 1, wherein the average horizontal area occupied by the at least one linear generator does not exceed to any material extent the
20 horizontal area occupied by the at least one float and any perimeter space surrounding the at least one float for the effective operation and motion thereof.

- 5.(currently amended) The apparatus of claim 1, wherein the at least one float is equipped with one or more paddles, suitably contoured, to augment the force of the
25 sea waves acting upon the at least one float.

6.(currently amended) The apparatus of claim 1, wherein the at least one float is so contoured as to minimise any wave latent forces acting upon it, while maximising its

buoyancy.

7.(currently amended) The apparatus of claim 1, wherein the stator of the at least one linear generator is maintained stationary and substantially perpendicular to the sea bed, and the armature thereof is affixed directly to the at least one float for traversing the stator
5 in accordance with the motion of the waves acting upon the at least one float.

8.(currently amended) The apparatus of claim 1, wherein the stator of the at least one linear generator is held in a cage above sea level, and the armature of the at least one linear generator is caused to move relative thereto by linkage means to the at least one float.

10 9.(currently amended) The apparatus of claim 8, wherein the at least one link to the at least one float is a direct extension of the armature of the at least one linear generator.

10.(currently amended) The apparatus according of claim 1, wherein the control means is used to regulate the effective load impedance presented to the at least one linear generator in accordance with the strength of the prevailing wave motion acting upon the
15 at least one float, the regulation being such as to ensure that the electromagnetic damping of the motion of the at least one linear generator as it generates electricity, is always such as to optimise the generation of power.